

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Appln. Of: KUNINOBU
Serial No.: 10/825,141
Filed: April 15, 2004
For: Data Transfer Method and System
Group: 2419 Confirmation No. 7831
Examiner: Mahmoudzadeh, Nima DOCKET: NEC FQ5-624

MAIL STOP APPEAL BRIEF - PATENTS
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This Brief is being filed in support of Appellants' Appeal from the Final Rejection by the Primary Examiner to the Board of Appeals and Interferences. A Notice of Appeal was timely filed under Certificate of Mailing on December 29, 2008.

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REAL PARTY IN INTEREST

The Real Party in Interest in this Appeal is NEC Corporation, a Japanese corporation having its principal place of business at 7-1, Shiba 5-chome, Minato-Ku, Tokyo, Japan. The Application has been assigned to NEC Corporation by the inventor Hiroaki Kuninobu, and the Assignment recorded in the U.S. Patent and Trademark Office on April 15, 2004 at Reel 015228 Frame 0151.

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RELATED APPEALS AND INTERFERENCES

To the best of the knowledge of the undersigned attorney and Appellants, there are no other appeals or interferences that would directly affect, or be directly affected by, or have a bearing on, the Board's decision in the present Appeal.

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STATUS OF THE CLAIMS

Claims 1-29 stand finally rejected and are on Appeal. The claims on Appeal are set forth in the **Claims Appendix** attached hereto.

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STATUS OF AMENDMENTS

Amendment A, filed in response to the August 17, 2007 Office Action, amended the specification as well as claims 1, 13, 20 and 27.

Amendment B, filed in response to the February 22, 2008 Office Action, made no changes to the claims.

The last amendment entered in this application is Amendment C under Rule 116, which was filed in response to a Final Action of September 3, 2008. Amendment C under Rule 116 made no changes to the claims, and was entered (see Advisory Action mailed December 12, 2008).

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SUMMARY OF CLAIMED SUBJECT MATTER

A. Background of the Invention

The present invention relates to techniques of transferring control information from a control terminal to a target data transmission equipment through a data transmission network. A routing function is needed to transfer a control packet from the control terminal to a target optical transmission equipment. The routing function can be realized by different protocols, for example, the TCP/IP protocol stack and the OSI protocol stack. Ordinarily, where network elements working in a different routing protocol exist between the control terminal and a target optical transmission equipment, the control packet cannot reach the target optical transmission equipment. A method for transferring data between networks of different protocols has been disclosed that combines a header for a second communication protocol onto a data frame of the first protocol, thereby producing a second data frame that can be transferred in the second network. (See Japanese Patent Application Unexamined Publication NO. P2002-171274A). However, such a conversion between the first and second data frames is limited to a network of no more than two protocols, and can only be effective in a network of those two predetermined protocols.

An object of the present invention is to provide a data transfer method and system allowing transmission of control information through a network including transmission equipments working in different communication protocols, independently of communication protocols.

B. Summary of the Invention

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The Application presently has 4 pending independent claims, namely, claims 1, 13, 20 and 27. Each of these claims are directed towards the data transfer of control information from a control terminal to a target through a data transmission network including at least one data transmission equipment working in a predetermined communication protocol.

Independent claims 1 and 20 provide a data transfer system and method, respectively, for transferring control information ("Control Packet (B)" in FIG. 2; "Control Information (B)" in FIG. 6; and "Control Packet" in FIG. 12) from a control terminal (items 11 and 14 in FIG. 2; item 21 in FIG. 12) to a target (item 16 in FIG. 2; "OTE5" in FIG. 6; and item 25 in FIG. 12) through a data transmission network including at least one data transmission equipment (items 12, 13, and 15 in FIG. 2; OTE1-OTE4 in FIG. 6; and items 22, 23, and 24 in FIG. 12) working in a predetermined communication protocol ((A) and (B) in FIGs. 2, 6 and 12). Each of the data transmission equipment includes a receiving section (page 11 of the original-filed disclosure, lines 7-9 and 19-22; items 101 and 201 in FIG. 5), a transmitting section (described at page 13, lines 21-24 and page 14, lines 2-5; items 109 and 209 in FIG. 5), and a forwarding section (shown in FIGs. 5, 9B, 10B and 11B and described throughout the specification, including page 17 lines 13-16; page 18, lines 9-12; and page 19, lines 7-10). The forwarding section forwards control information included in a transmission signal without controlling the control information according to a predetermined communication protocol.

Independent claim 13 provides a data transmission apparatus as described with respect to the "at least one data transmission equipment" (items 12, 13 and 15 in Fig. 2; OTE1-OTE4 in Fig. 6; and items 22, 23 and 24 in Fig. 12) of claims 1 and 20. Claim 27 provides a program instructing a computer of a data transmission equipment to forward control information,

wherein the data transmission equipment works as described previously in the discussion of claims 1, 13 and 20.

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GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The final rejection raises numerous art rejections which review is requested on appeal as follows:

(1) Whether claims 1, 2, 7, 11, 13, 14, 19, 20, 21 and 27 are unpatentable under 35 U.S.C. § 103(a) as being obvious over US Patent Publication No. 2003/0091057 to Miyashita et al. (hereinafter "Miyashita") in view of US Patent No. 6,775,239 to Akita et al. (hereinafter "Akita");

(2) Whether claims 3-6, 12, 15-18, 22-26, 28 and 29 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Miyashita in view of Akita;

(3) Whether claims 8-10 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Miyashita in view of Akita and further in view of European Patent No. EP1206099 to Czeiger et al. (hereinafter "Czeiger");

ARGUMENTS

I. The rejection of claims 1, 2, 7, 11, 13, 14, 19, 20, 21 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Miyashita in view of Akita is in error.

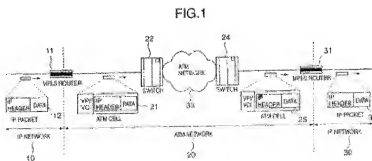
It is well established at law that, for a proper rejection of a claim under 35 U.S.C. § 103 as being obvious based upon a combination of references, the cited combination of references must teach, disclose, or suggest, either implicitly or explicitly, all elements/features/steps of the claim at issue. See, e.g., *In re Dow Chemical*, 5 USPQ 2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 USPQ 871, 881 (CCPA. 1981).

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ 2d 1596 (Fed. Cir. 1988).

The combination of Miyashita and Akita does not teach, disclose or suggest, either implicitly or explicitly, all elements of the claims at issue. Specifically, independent claims 1 and 13 each require, in part, "a forwarding section for forwarding control information included in the transmission signal to the transmitting section **without controlling** the control information according to the **predetermined communication protocol**." Similarly, independent claims 20 and 27 each require, in part, "forwarding control information included in the transmission signal to a transmitting section **without controlling** the control information

according to the **predetermined communication protocol.**" No combination of Miyashita and Akita teaches this limitation.

The Examiner admits that Miyashita fails to teach the forwarding section as required by claims 1, 13, 20 and 27. (See Final Office Action, dated September 3, 2008 at page 3, lines 6-9). However, the Examiner mistakenly cites Figure 1 of Akita as supplying the missing teaching of a forwarding section for forwarding control information included in the transmission signal to a transmitting section without controlling the control information according to the predetermined communication protocol. Figure 1 of Akita is reduced below for the convenience of the Board:



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In the Advisory Action of December 12, 2008, the Examiner states: "As disclosed on Fig. 1 of Akita et al., the IP packet is encapsulated within an ATM cell in order to go through the ATM Network... IP header of IP Packet 12 includes control information which due to encapsulating feature done by MPLS Router, the control data encapsulated according to the

lable [sic] data 41 of Fig. 2.... the ATM switching function is done based on the VPI/VCI in the header of the cell 21....” Thus, even by the Examiner’s interpretation, Akita actually teaches that the forwarding section does control the control information according to a predetermined protocol, which is contrary to the requirements of Appellant’s independent claims 1, 13, 20 and 27. That is, Akita teaches that the control information (located within the IP packet) is controlled according to a predetermined protocol (IP and ATM).

Akita teaches controlling the control information by teaching that “[t]he MPLS router 40 converts IP packets 42 and 43 supplied from the IP network into ATM cells 44 and 45 by utilizing the label data 41, and supplies the ATM cells 44 and 45 to the ATM switch 50.” (See Akita, col. 1, lines 45-48). Akita further states that the MPLS router 40 refers to the destination IP address of the IP header, reads the VPI/VCI from the label data that corresponds to the particular destination IP address, and then generates the ATM cell by using the obtained VPI/VCI and the IP packet. (See col. 1, lines 48-54). Essentially, the MPLS router “looks up” the label data to find the VPI/VCI header that corresponds to the IP address, and then attaches the VPI/VCI to the packet, which is then routed to the ATM switch. The ATM switch, in turn, “looks up” the switch data to find the output VPI/VCI that corresponds to the input VPI/VCI, and then attaches the corresponding output VPI/VCI to the packet, which is then routed to the appropriate MPLS router. (See, e.g., Akita Fig. 2).

One having ordinary skill in the art would consider the label data 41 and the switch data 51, which are controlling the MPLS transmission with the MPLS router and trunk switch, a “communication protocol,” because they control or enable a connection, communication, or data transmission between two computing endpoints. Furthermore, the label data and switch data comprise a “predetermined communication protocol” because they are composed of IP

addresses and, for each, a corresponding VPI/VCI. Thus, the communication protocol must be predetermined so that the contents of the label data and switch data can be of the same protocol. Otherwise, data transfer would not be possible in Akita.

Therefore, Akita can clearly be said to teach controlling the control information according to a predetermined communication protocol. Because claims 1, 13, 20 and 27 require the opposite – “forwarding control information...without controlling the control information according to the predetermined communication protocol” – Akita fails to support the Examiner’s rejection.

Moreover, as noted in Amendment A, Miyashita specifically teaches control information being controlled according to the predetermined communication protocol:

The reception unit 60a in the data transmission equipment 60 receives data transmitted from the data transmission equipment 62. The control information extraction unit 60b extracts control information from the data received by the reception unit 60a. When the control information extracted by the control information extraction unit 60b includes a request for storage of data, the data acquisition unit 60c acquires the data from the data received by the reception unit 60a. The storage unit 60d stores the data acquired by the data acquisition unit 60c. When the control information extracted by the control information extraction unit 60b includes a request for readout of the data stored in the storage unit 60d, the readout unit 60e reads out the data from the storage unit 60d. The transmission unit 60f transmits to the client 63 the data read out by the readout unit 60e. (Underlining added for emphasis)

(Miyashita, paragraph 84). Thus, Miyashita actually teaches away from the requirements of independent claims 1, 13, 20 and 27. As such, one having ordinary skill in the art would have no motivation or rationale to look to combine Miyashita with Akita. In any event, in light of the foregoing discussion, no combination of Miyashita and Akita reasonably could be said to achieve or render obvious any of claims 1, 13, 20 and 27. Thus, the rejection of claims 1, 13, 20 and 27 as obvious from Miyashita in view of Nakayoshi et al is in error. Claims 2, 7, 11, 14,

19 and 21 are dependent on claims 1, 13 or 20 as the case may be, and are allowable over Miyashita and Akita for the same reasons above adduced relative to claims 1, 13 and 20.

II. The rejection of claims 3-6, 12, 15-18, 22-26, 28 and 29 under 35 U.S.C. § 103(a) as being unpatentable over Miyashita in view of Akita is in error.

Turning to rejection of claims 3-6, 12, 15-18, 22-26, 28 and 29 under 35 U.S.C. § 103(a) as being unpatentable over Miyashita in view of Akita, each of said claims ultimately depend upon independent claims 1, 13, 20 and 27, as the case may be. The deficiencies of the combination of Miyashita in view of Akita as applied to claims 1, 13, 20 and 27 are discussed above. In the rejection of claims 3-6, 12, 15-18, 22-26, 28 and 29, the Examiner relies solely upon a combination of Miyashita and Akita, and fills in the missing requirements with what the Examiner contends is either "well known in the art," or "obvious design choice." However, no combination of what the Examiner contends is "well known in the art" or "obvious design choice" can overcome the deficiencies of the combination of Miyashita and Akita as applied to independent claims 1, 13, 20 and 27, as discussed above. As such, no combination of Miyashita and Akita would achieve or render obvious independent claims 1, 13, 20 and 27, or any of claims 3-6, 12, 15-18, 22-26, 28 and 29 which depend thereupon. Thus, the rejection of claims 3-6, 12, 15-18, 22-26, 28 and 29 likewise is an error.

III. The rejection of claims 8-10 under 35 U.S.C. § 103(a) as being unpatentable over Miyashita in view of Akita and further in view of Czeiger is in error.

Turning to the rejection of claims 8-10 as obvious from Miyashita in view of Akita and further in view of Czeiger, each of claims 8-10 depend, directly or indirectly, upon independent

claim 1. The deficiencies of the primary combination Miyashita and Akita vis-à-vis claim 1 are discussed above. Czeiger does not supply the missing teachings to Miyashita and Akita necessary to achieve or render obvious claim 1 or claims 8-10 which depend thereon. The Examiner cites Czeiger as teaching a data transfer system wherein an upstream data transmission equipment works in a different communication protocol and a downstream data transmission equipment works in a predetermined communication protocol, or wherein both an upstream data transmission equipment and a downstream data transmission equipment work in a predetermined communication protocol, or wherein an upstream data transmission equipment works in a predetermined communication protocol and a downstream data transmission equipment works in a different communication protocol. Even assuming *arguendo* that the Examiner correctly characterizes the teachings of Czeiger, the more basic and essential features missing from the primary combination of Miyashita and Akita are not supplied by Czeiger. That is, Czeiger fails to teach forwarding control information included in the transmission signal to a transmitting section without controlling the control information according to the predetermined communication protocol, as required by independent claim 1. Thus, no combination of Miyashita, Akita and Czeiger could be said to achieve or render obvious independent claim 1, or any of claims 8-10, which depend thereon. Accordingly, the rejection of claims 8-10 as obvious from Miyashita in view of Akita and Czeiger likewise is in error.

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SUMMARY

In summary, the Examiner has failed to present a prima facie case of obviousness for any of the claims in question. In particular, the Examiner has mischaracterized the teachings of the prior art, and erroneously concluded that Akita teaches forwarding control information included in the transmission signal to a transmitting section without controlling the control information according to the predetermined communication protocol, when Akita, in fact, teaches the opposite.

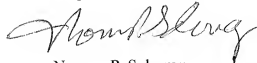
Accordingly, it is submitted that independent claims 1, 13, 20 and 27, and the several claims that depend thereon, cannot be said to be obvious from the combination of Miyashita and Akita, or further in combination with Czeiger. As the Examiner has failed to make out a prima facie case of obviousness, Appellants respectfully submit that the rejection of the claims is in error and should be reversed.

CONCLUSION

For the reasons above adduced, it is submitted that the rejections of all of the claims are in error, and should be reversed in all respects.

In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our Deposit Account Number 08-1391.

Respectfully submitted,



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CERTIFICATE OF ELECTRONIC FILING

I hereby certify that this paper is being deposited with the United States Patent Office
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A handwritten signature in cursive script, appearing to read "Sharon McKnight", is written over a horizontal line.

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CLAIMS APPENDIX

Claim 1 (previously presented): A data transfer system for transferring control information from a control terminal to a target through a data transmission network including at least one data transmission equipment working in a predetermined communication protocol, wherein each of said at least one data transmission equipment comprises: a receiving section for receiving a transmission signal including control information from upstream; a transmitting section for transmitting the transmission signal including control information to downstream; and a forwarding section for forwarding control information included in the transmission signal to the transmitting section without controlling the control information according to the predetermined communication protocol.

Claim 2 (original): The data transfer system according to claim 1, wherein the forwarding section comprises: a data extractor for extracting the control information from the received transmission signal; and a data inserter for inserting the extracted control information into a predetermined one of a first location and a second location of the transmission signal to be transmitted.

Claim 3 (original): The data transfer system according to claim 2, wherein the first location is data communication channel (DCC) bytes of the transmission signal and the second location is DCC transmit bytes that are previously determined in the transmission signal.

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Claim 4 (original): The data transfer system according to claim 3, wherein the data extractor extracts the control information from the first location of the received transmission signal; and the data inserter inserts the extracted control information into the second location.

Claim 5 (original): The data transfer system according to claim 3, wherein the data extractor extracts the control information from the second location of the received transmission signal; and the data inserter inserts the extracted control information into the second location.

Claim 6 (original): The data transfer system according to claim 3, wherein the data extractor extracts the control information from the second location of the received transmission signal; and the data inserter inserts the extracted control information into the first location.

Claim 7 (original): The data transfer system according to claim 1, wherein the forwarding section further comprises: a data extractor for extracting the control information from the received transmission signal; a first data inserter for inserting the extracted control information into a first location of the transmission signal to be transmitted; a second data inserter for inserting the extracted control information into a second location of the transmission signal to be transmitted; and a switch for forwarding the extracted control information to a selected one of the first and second data inserters depending on predetermined control information.

Claim 8 (original): The data transfer system according to claim 4, wherein an upstream data transmission equipment works in a different communication protocol and a downstream data transmission equipment works in the predetermined communication protocol.

Claim 9 (original): The data transfer system according to claim 5, wherein both an upstream data transmission equipment and a downstream data transmission equipment work in the predetermined communication protocol.

Claim 10 (original): The data transfer system according to claim 6, wherein an upstream data transmission equipment works in the predetermined communication protocol and a downstream data transmission equipment works in a different communication protocol.

Claim 11 (original): The data transfer system according to claim 1, wherein the data transmission network is composed of data transmission equipments working in the predetermined communication protocol.

Claim 12. (original): The data transfer system according to claim 3, wherein bytes that are not used in the transmission signal are assigned to the DCC transmit bytes.

Claim 13 (previously presented): A data transmission apparatus in a data transfer system for transferring control information from a control terminal to a target through a data transmission network, wherein the data transmission apparatus works in a predetermined communication protocol, comprising: a receiving section for receiving a transmission signal including control information from upstream; a transmitting section for transmitting the transmission signal including control information to downstream; and a forwarding section for forwarding control information included in the transmission signal to the transmitting section without controlling the control information according to the predetermined communication protocol.

Claim 14 (original): The data transmission apparatus according to claim 13, wherein the forwarding section comprises: a data extractor for extracting the control information from the received transmission signal; and a data inserter for inserting the extracted control information into a predetermined one of a first location and a second location of the transmission signal to be transmitted.

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Claim 15 (original): The data transmission apparatus according to claim 14, wherein the first location is data communication channel (DCC) bytes of the transmission signal and the second location is DCC transmit bytes that are previously determined in the transmission signal.

Claim 16 (original): The data transmission apparatus according to claim 15, wherein the data extractor extracts the control information from the first location of the received transmission signal; and the data inserter inserts the extracted control information into the second location.

Claim 17 (original): The data transmission apparatus according to claim 15, wherein the data extractor extracts the control information from the second location of the received transmission signal; and the data inserter inserts the extracted control information into the second location.

Claim 18 (original): The data transmission apparatus according to claim 15, wherein the data extractor extracts the control information from the second location of the received transmission signal; and the data inserter inserts the extracted control information into the first location.

Claim 19 (original): The data transmission apparatus according to claim 13, wherein the forwarding section further comprises: a data extractor for extracting the control information from the received transmission signal; a first data inserter for inserting the extracted control information into a first location of the transmission signal to be transmitted; a second data inserter for inserting the extracted control information into a second location of the transmission signal to be transmitted; and a switch for forwarding the extracted control information to a selected one of the first and second data inserters depending on predetermined control information.

Claim 20 (previously presented): A data transfer method for transferring control information from a control terminal to a target through a data transmission network including at least one data transmission equipment working in a predetermined communication protocol, comprising:

at each of said at least one data transmission equipment, a) receiving a transmission signal including control information at a receiving section from upstream; b) forwarding control information included in the transmission signal to a transmitting section without controlling the control information according to the predetermined communication protocol; and c) transmitting the transmission signal including the control information from the transmitting section to downstream.

Claim 21 (original): The data transfer method according to claim 20, wherein the step b) comprises: b.1) extracting the control information from the received transmission signal; and b.2) inserting the extracted control information into a predetermined one of a first location and a second location of the transmission signal to be transmitted.

Claim 22 (original): The data transfer method according to claim 21, wherein the first location is data communication channel (DCC) bytes of the transmission signal and the second location is DCC transmit bytes that are previously determined in the transmission signal.

Claim 23 (original): The data transfer method according to claim 22, wherein in the step b.1), the control information is extracted from the first location of the received transmission signal; and in the step b.2), the extracted control information is inserted into the second location.

Claim 24 (original): The data transfer method according to claim 22, wherein in the step b.1), the control information is extracted from the second location of the received transmission signal; and in the step b.2), the extracted control information is inserted into the second location.

Claim 25 (original): The data transfer method according to claim 22, wherein in the step b.1), the control information is extracted from the second location of the received transmission signal; and in the step b.2), the extracted control information is inserted into the first location.

Claim 26 (original): The data transfer method according to claim 22, wherein bytes that are not used in the transmission signal are assigned to the DCC transmit bytes.

Claim 27 (previously presented): A program instructing a computer of a data transmission equipment to forward control information, wherein the data transmission equipment works in a predetermined communication protocol, comprising the steps of: a) receiving a transmission signal including control information at a receiving section from upstream; b) forwarding control information included in the transmission signal to a transmitting section without controlling the control information according to the predetermined communication protocol; and c) transmitting the transmission signal including the control information from the transmitting section to downstream.

Claim 28 (original): The program according to claim 27, wherein the step b) comprises: b.1) extracting the control information from the received transmission signal; and b.2) inserting the extracted control information into a predetermined one of a first location and a second location of the transmission signal to be transmitted.

Claim 29 (original): The program according to claim 28, wherein the first location is data communication channel (DCC) bytes of the transmission signal and the second location is DCC transmit bytes that are previously determined in the transmission signal.

EVIDENCE APPENDIX

None submitted by the Applicant and none entered by the Examiner.

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RELATED PROCEEDINGS APPENDIX

No related proceedings exist or existed.

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